

49. An irrigation probe according to claim 6, wherein the ablation electrode has an exposed surface that is conductive around a full circumference of the exposed surface.

51. An irrigation probe according to claim 48, wherein substantially the entire exposed surface of the ablation electrode is conductive.

52. An irrigation probe according to claim 49, wherein substantially the entire exposed surface of the ablation electrode is conductive.

REMARKS

Claims 2 to 39, 41 to 49, 51 and 52 are pending in this application, of which claims 2 and 6 are independent. Applicant has canceled claims 40, 50, and 53. In view of the following remarks, Applicant respectfully requests reconsideration and a timely indication of allowance.

Rejections Under 35 U.S.C. § 112, Second Paragraph

The Examiner has rejected claims 15 and 16 under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. Specifically, the Examiner states that "[c]laims 15 and 16 are indefinite because it is not clear if the flexible plastic is the same or in addition to the infusion tube set forth in claim 6."

Claim 15 depends from claims 6 and 7. Claim 6 recites "an infusion tube having proximal and distal ends." Claim 7 recites "a tubular electrode...wherein the tubular electrode forms the infusion tube." (Emphasis added.) Claim 15 recites "a flexible plastic tubing attached to the proximal end of the tubular electrode." As such, the

infusion tube and the flexible tubing are separate elements. This is true for claim 15 and for claim 16, which depends from claim 15. Accordingly, Applicant respectfully requests that the rejection of claims 15 and 16 under 35 U.S.C. § 112, second paragraph, be withdrawn.

Rejections Under 35 U.S.C. § 103(a)

The Examiner has rejected claims 2 to 4, 6 to 12, 14 to 23, 48, 49, 51 and 52 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Lorentzen (U.S. Patent. No. 5,951,546) in view of Panescu (U.S. Patent. No. 6,056,745). Applicant respectfully traverses this rejection.

Independent claims 2 and 6 are each directed to an irrigation ablation probe, and each recites "the ablation electrode having at least one irrigation opening through which fluid can pass...to the outside of the ablation electrode." Lorentzen discloses a cooled needle electrode 10 for ablating tissue. The electrode 10 comprises an outer tube 14 covered along part of its length by an insulating material and having an exposed distal region or tip part 16 for ablating tissue. Disposed within the outer tube 14 is an inner tube 18 for supplying a cooling fluid to the inner surface of the tip 16 of the outer tube 14 to prevent tissue charring during ablation. As stated in Lorentzen, "water is led through the inner tube 18 to the tip part 16 and away from the tip part through the interior of the outer tube 14. The outer tube 14 is connected to and communicates with a line 24 for discharge of the cooling water. The lines 22 and 24 communicates with a cooling water reservoir (not shown). Circulation of the cooling water is established with a pump (not shown)." (Col. 9, line 62 to col. 10, line 4.)

Lorentzen discloses alternative embodiments in FIGs. 2a to 2f. In each of these embodiments the cooling fluid is recirculated, being pumped from the cooling water reservoir, to the tip part 16 and back

to the cooling reservoir. Lorentzen does not disclose, teach or suggest for its electrode to have at least one irrigation opening through which fluid can pass to the outside of the ablation needle. However, the Examiner states that it would have been obvious to modify the electrode of Lorentzen to have the irrigation openings disclosed in Panescu.

Applicant respectfully submits that there is no motivation to modify Lorentzen's device to have an electrode with irrigation openings because doing so would destroy its intended function, namely, to recirculate cooling fluid between the cooling water reservoir and the tip part of the electrode 10. (See generally col. 9, line 41, to col. 10, line 40.) As the Examiner is aware, if a proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. M.P.E.P. § 2143.01. In this instance, modifying Lorentzen's electrode to include openings would defeat the ability of the catheter to recirculate the cooling fluid, thereby rendering the catheter unsatisfactory for its intended purpose.

As such Lorentzen and Panescu do not render claim 2 or claim 6 obvious. Claims 3, 4, 7 to 12, 14 to 23, 48, 49, 51 and 52 each depend from either claim 2 or claim 6, and as such, are also allowable over Lorentzen and Panescu as being dependent from an allowable base claim and for the additional limitations they contain therein. Accordingly, Applicant respectfully requests that the rejection of claims 2 to 4, 6 to 12, 14 to 23, 48, 49, 51 and 52 over Lorentzen and Panescu under 35 U.S.C. § 103(a) be withdrawn.

The Examiner has rejected claims 5 and 13 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Lorentzen in view of Panescu and Ashley (U.S. Patent. No. 6,176,857). Claims 5 and 13 depend from claims 2 and 6 respectively. As previously discussed, Applicant respectfully submits that claims 2 and 6 are allowable over

Lorentzen and Panescu. Ashley does not provide the elements that are missing from Lorentzen and Panescu, nor does Ashley provide the motivation to modify Lorentzen that is missing from Lorentzen and Panescu. As such, claims 5 and 13 are also allowable over Lorentzen, Panescu and Ashley as being dependent from an allowable base claim and for the additional limitations they contain therein. Accordingly, Applicant respectfully requests that the rejection of claims 5 and 13 over Lorentzen, Panescu and Ashley under 35 U.S.C. § 103(a) be withdrawn.

Pending Claims 24 to 39 and 41 to 47

Pending claims 24 to 39 and 41 to 47 have been withdrawn from consideration. Each of these claims depends from either claim 2 or claim 6. Claims 2 and 6 are now believed to be in condition for allowance. As such, Applicant submits that claims 24 to 39 and 41 to 47 are also in condition for allowance as being dependent from an allowable base claim and for the additional limitations they contain therein. No further search is required in connection with these claims. Accordingly, Applicant respectfully requests that claims 24 to 39 and 41 to 47 also be allowed.

In view of the above amendments and remarks, Applicant respectfully submits that claims 2 to 39, 41 to 49, 51 and 52 are in condition for allowance, and a timely indication of allowance is respectfully requested. If there are any remaining issues that can be addressed by telephone, Applicant invites the Examiner to contact the undersigned at the number indicated.

Respectfully submitted,
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